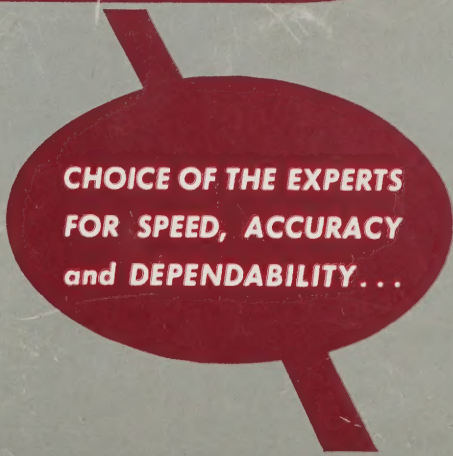




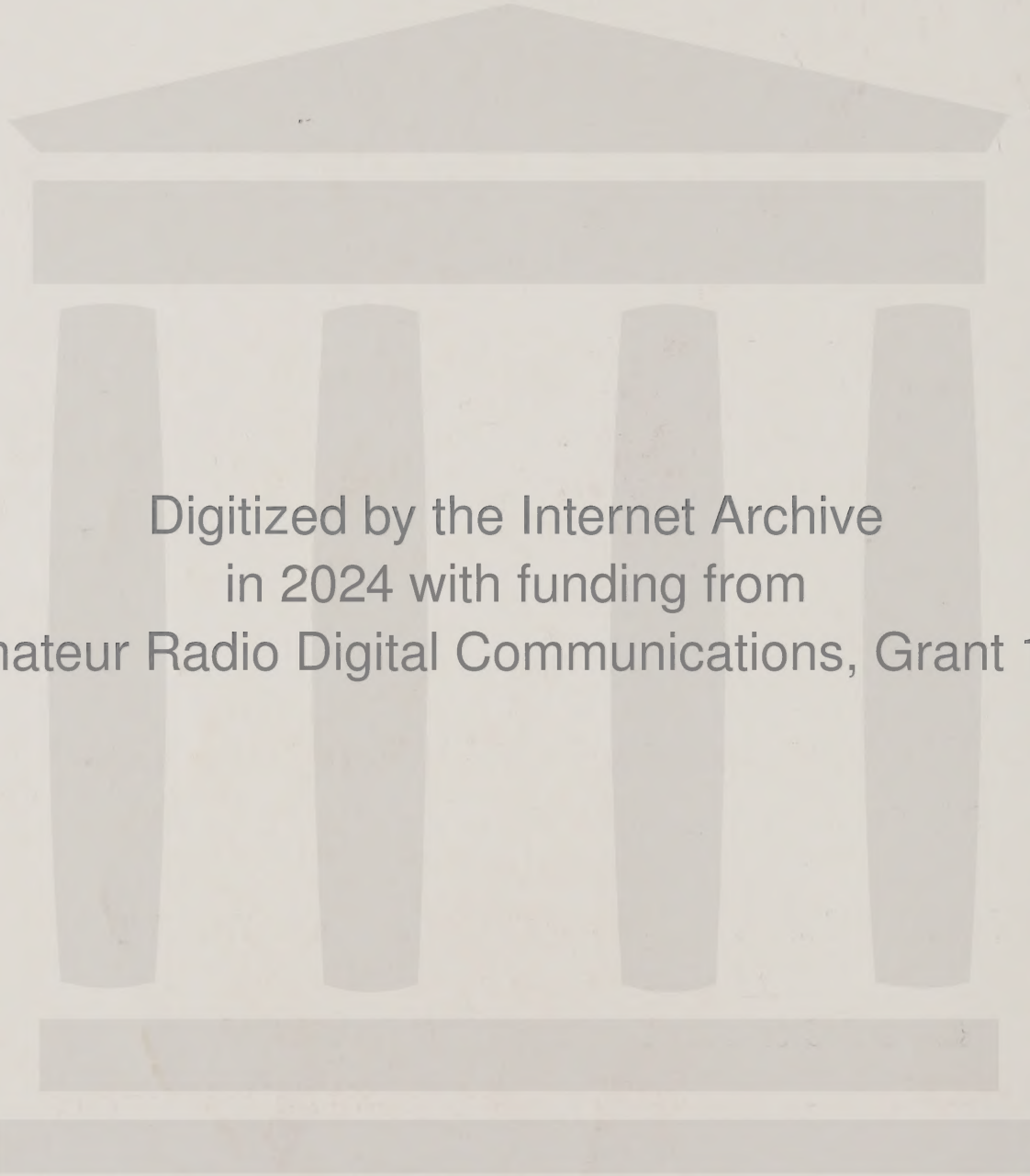
THE
HICKOK

ELECTRICAL
INSTRUMENT
COMPANY

OPERATING INSTRUCTIONS
FOR
DYNAMIC MUTUAL CONDUCTANCE TUBE TESTER
MODEL 600A
READS DIRECTLY IN MICROMHOS



CHOICE OF THE EXPERTS
FOR SPEED, ACCURACY
and DEPENDABILITY...



Digitized by the Internet Archive
in 2024 with funding from
Amateur Radio Digital Communications, Grant 151

<https://archive.org/details/operatinginstruc00unse>

OPERATING INSTRUCTIONS
FOR
DYNAMIC MUTUAL CONDUCTANCE TUBE TESTER
MODEL 600A

APPLICABLE TO TESTERS HAVING SERIAL NUMBERS ABOVE
135-10,000

Copyright 1954

THE HICKOK ELECTRICAL INSTRUMENT COMPANY
10514 DUPONT AVENUE
CLEVELAND 8, OHIO

*Neither this book nor any part thereof may be copied
without permission of the copyright owner.*

FUSE IN BIAS CIRCUIT

This tube tester is equipped with a fuse in the Grid Bias Circuit as a protection for the Bias potentiometer in case an attempt is made to test a shorted tube.

NOTE: ALWAYS MAKE SHORT CHECK BEFORE MAKING QUALITY TEST.

The fuse is mounted in the main control panel where it is readily visible.

A burned out bias fuse lamp will result in the failure of the mutual conductance meter to read when the GM button is pressed. If the fuse lamp burns out, replace only with a No. 49 panel lamp.

STANDARD RETMA GUARANTEE

The Hickok Electrical Instrument Company warrants instruments manufactured by it to be free from defective material or factory workmanship and agrees to repair such instruments which, under normal use and service, disclose the defect to be the fault of our manufacturing. Our obligation under this warranty is limited to repairing any instrument or test equipment which proves to be defective, when returned to us transportation prepaid, within 90 days from the date of original purchase, and provided the serial number has been made known to us promptly for our records.

This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons or service stations in any way so as, in our judgment, to injure their stability or reliability, or which have been subject to misuse, negligence, or accident, or which have had the serial number altered, effaced or removed. Neither does this warranty apply to any of our products which have been connected, installed, or adjusted otherwise than in accordance with the instructions furnished by us. Accessories, including all vacuum tubes not of our manufacture, used with this product are not covered by this warranty.

This warranty is in lieu of all other warranties expressed or implied, and no representative or person is authorized to assume for us any other liability in connection with the sale of our products.

Parts will be made available for a minimum period of five years after the manufacture of this equipment has been discontinued. Parts include all materials, charts, instructions, diagrams, accessories, etc., which have been furnished in the standard model.

RETURNING EQUIPMENT FOR REPAIR

Before returning any equipment for service, under warranty or otherwise, the factory must first be contacted giving the nature of the trouble. Instructions will then be given for either correcting the trouble or returning the equipment. Upon authorization, this equipment should be forwarded directly to the Hickok factory address, 10636 Leuer Avenue, Cleveland, Ohio, or to a designated service station in your locality. All correspondence pertaining to repairs should be directed to the Hickok office address, 10514 Dupont Avenue, Cleveland 8, Ohio, or to the authorized service station designated.

REGISTRATION CARD

The above guarantee is contingent upon the attached registration card being returned to the factory immediately upon receipt of the equipment.

NOTE

SEE INSTRUCTIONS FOR FILAMENT CONTINUITY ON PAGE 5, PARAGRAPH 15.

TO TEST ACORN TUBES TYPE NUMBERS 6F4, 6L4, 954, 955, 956, 957, 958, 959, 5731, 9004 AND 9005 ON THE MODEL 600A TUBE TESTER REQUIRES THE USE OF ADAPTER CODE NUMBER 1050-9.

THIS ADAPTER WILL BE SUPPLIED ON SPECIAL ORDER.

AUTOMOBILE RADIO TUBES

IT OFTEN HAPPENS THAT AUTOMOBILES OPERATED AT NIGHT WITH RADIO, LIGHT, FANS, ETC., ALL TURNED ON AT THE SAME TIME, PUT SUCH A SEVERE LOAD ON THE AUTO BATTERY THAT THE BATTERY IS UNABLE TO DELIVER FULL VOLTAGE, ESPECIALLY IN SLOW MOVING TRAFFIC OR WHEN WAITING FOR TRAFFIC LIGHT. IF AUTO RADIO TROUBLE IS EXPERIENCED, MUCH TIME CAN BE SAVED BY FIRST CHECKING THE TUBES AT 6.3 VOLTS, THEN SWITCHING THE FILAMENT VOLTAGE TO 5 VOLTS. IF TUBE READING DROPS MARKEDLY AT 5 VOLTS, THE TUBE SHOULD BE REPLACED.

IF THE AUTOMOBILE HAS 12 VOLT RADIO SYSTEM, FIRST CHECK THE TUBES AT 12.6 VOLTS, THEN DROP TO 10 VOLTS FOR RECHECK.

OPERATING INSTRUCTIONS

FOR

DYNAMIC MUTUAL CONDUCTANCE TUBE TESTER

MODEL 600A

The Instrument Packed Herewith is:_____

1. Model 600A Vacuum Tube Tester_____

Accessories included with the Model 600A tester are:

1.-- Booklet Instructions for Model 600A_____

1 -- Grid Lead with Clip_____

Serial Number_____

Signed:_____

Instruction for operation of Model 600A.

Read These Instructions Through Before Attempting to operate the Tester.

1. This instrument is designed to operate on 60 cycles 110-125 volt power source. It can be used on frequencies from 50 to 400 cycles, 110-120 volts.

2. There are two rectifier tubes, an 83 and a 5Y3GT, necessary to operate this tester. They are included. The fuse lamp is a standard #81 auto lamp. The neon lamp is a 1/25 watt, 110 volt, Miniature Bayonet S.C. base signal lamp. The bias fuse is a standard #49 lamp.

3. LINE VOLTAGE ADJUSTMENT. - After the power is turned ON, press the push switch P7 which will cause the pointer of the meter to move up the scale. The button P7 is held down and the knob, LINE ADJUST, is turned until the meter pointer rests exactly over the mark, LINE TEST, at the center of the meter scale. This establishes standard voltages on the tube. Make final line adjustment after the tube being tested is placed in its socket.

4. SELECTORS. - The row of selector knobs across the center of the control panel is for the purpose of conducting proper voltages to the tube's base pins. The operation of setting these selector knobs is similar to dialing a telephone number. On the roll chart, below the word SELECTORS appear the dialing numbers. These dialing numbers consist of two letters and five figures. Example: JR-6237-5. Starting at the left, the first knob (FIL) is turned until it points to the letter J, the second knob (FIL) is turned to R, the third knob

(GRID) to 6, the fourth (PLATE) to 2, the fifth (SCREEN) to 3, the sixth (CATHODE) to 7, and the seventh (SUPPRESSOR) to 5. These selector switches are electrically interlocked so that it is impossible to connect two different voltages to the same tube pin. Thus accidental shorts are avoided.

The selector system is designed to minimize selector settings. For example the filament setting is nearly always JR. These two knobs seldom need resetting. Also in testing duo-diode-triode tubes the amount of selector setting has been reduced to a minimum.

5. SHORT TEST. - The SHORTS switch has six positions. The first five are used in testing the tube for shorts. The sixth position TUBE TEST is used when indicating mutual conductance. Use the TUBE TEST Position only if the tube has no shorts.

Turning the SHORTS switch successively through the positions 1-2-3-4-5 connects the various elements in turn across the test voltage. Tube having shorted elements will complete the circuit and cause the neon lamp to glow. Tubes may be tested for shorts either hot or cold. A short is indicated by a steady glow on both plates of the neon lamp. A shorted tube should be discarded without further test. With tubes having more than one section such as the 6J6, make short test for each section.

SHORT TEST

An improved Short Test is incorporated in the design of this tube tester. Wide experience has demonstrated that most satisfactory results are obtained when tubes are classified for short test purposes.

The toggle switch is thrown to miniature and subminiature position for all subminiature, button seven pin and button nine pin tubes. The other position is used for tubes having regular base pins, including loctal base tubes.

HEATER CATHODE LEAKAGE

A particularly troublesome defect in tubes, especially those used in television, is a leakage between heater and cathode. This leakage may be quite high, sometimes running to several megohms. It may be too high to cause the neon lamp to glow in the ordinary way. However, these leaks may be detected on your new Model 600A.

You will note that a heater-cathode short will cause the

neon lamp to glow on position 1 (one). While the short switch is resting on position 1, during short test operation a condenser will be charging through the leak. If the switch is turned from position 1 to position 2, a sharp flash of the neon lamp will be seen. This will not repeat until the switch is again turned to position 1 allowing the condenser to recharge through the leakage. Many baffling cases of trouble can be located in this way.

LOCATING SHORTED ELEMENTS. In the following table (X) under any SHORT switch position indicates that the neon lamp glows in that position.

KIND OF SHORT	1	2	3	4	5
HTR-CATH	X				
HTR-GRID	X	X			
HTR-SCRN	X	X	X		
HTR-PLT	X	X	X	X	
HTR-SUP	X	X	X	X	X
CATH-GRID		X			
CATH-SCRN		X	X		
CATH-PLT		X	X	X	
CATH-SUP		X	X	X	X
GRID-SCRN			X		
GRID-PLT			X	X	
GRID-SUP			X	X	X
SCRN-PLT				X	
SCRN-SUP				X	X
PLT-SUP					X

6. MUTUAL CONDUCTANCE. - Tubes having SHORTS should be discarded without further tests.

If the tube passes the preliminary short test it is then tested for MUTUAL CONDUCTANCE which is the best test for amplifier tubes. Turn the SHORTS switch to TUBE TEST position. On the roller chart, reading from left to right, opposite the tube type appear: FIL. VOLTAGE; SELECTORS, which were explained in paragraph (4) above; BIAS, which gives the setting for the BIAS dial; ENG, which gives the setting for the ENGLISH dial;

PRESS, which indicates the push button to be pressed for meter reading; MUT-COND. which gives the AVERAGE MUTUAL CONDUCTANCE in MICROMHOS of the tube being tested. Under the heading NOTATIONS appear special notes pertaining to the testing of the tube.

The ENGLISH setting is used when it is desired to read the value of the tube on the RED-GREEN (ENGLISH) sector of the meter scale. When using the ENGLISH scale the MICROMHO readings are disregarded.

NOTE

Tubes having less than 500 Micromhos cannot be made to read in the GREEN sector of the meter scale. Such tubes list micromho reading only and are good if the reading is above a specified minimum.

Micromhos are indicated in three ranges 0-3000, 0-6000, 0-15,000.

a. On the English dial are three dots stamped into the metal and filled with red lacquer. These dots are the points used in setting the micromho ranges.

b. The dot near 73 on the dial is the setting point for the 3000 micromho scale.

c. The dot near 86 is the point for the 6000 micromho scale.

d. The dot near 92 is the point for the 15,000 micromho scale.

e. When reading micromhos the RED and GREEN sectors of the meter scale are disregarded.

f. When testing for mutual conductance the push switch P4--Gm is pressed. Gm is the symbol for mutual conductance.

CAUTION: Do not press P4 when testing rectifier tubes.

g. Tubes having more than one section, such as the 6J6, require different dial settings for each section.

7. RECTIFIER TUBE TEST. - Rectifier tubes, including diode tubes and diode sections of multiple element tubes, having no mutual conductance are tested for emission only.

a. The push switch P1 is used when testing detector diodes. It applies a low voltage which will not injure the delicate cathode. Good diodes will cause the pointer of the meter to move above the pointer marked DIODES O.K.

b. The push switch P2 is used when testing cold cathode rectifiers such as the 0Z4. This applies a voltage sufficiently high to ionize the tube and start conduction. Good tubes will read in the green (GOOD) sector of the meter scale.

c. The push switch P3 is used when testing ordinary rectifier tubes, such as the 5Y3. This applies a medium voltage which is best adapted to reveal defects in this type of tube. Good tubes will read in the green (GOOD) sector of the meter scale.

NOTE

On the data chart a star (★) following P1, P2, P3 and P5 indicates that the ENGLISH setting only is used.

8. GAS TEST. - The push switches P5 and P6 are used to test an amplifier tube for gas content.

a. Set the English dial at 73.

b. The push switch P5 is pressed and held down while the BIAS dial is turned to cause the pointer of the meter to indicate 100 micromhos on the 0-3000. scale.

c. Hold down P5 and press P6.

d. If the tube contains gas the pointer of the meter will move UP the scale. If the pointer movement is not more than one division of the scale the gas content is satisfactory.

NOTE

With some tubes, such as the type 45, the micromho reading cannot be brought down to 100 by turning the BIAS dial. In such case turn the BIAS dial to 100 and test for gas.

e. Some tubes develop gas after being heated for a period of time. If a tube is suspected, allow it to heat for a few minutes.

9. METER REVERSE. - Directly below the indicating meter is a switch marked REVERSE-NORMAL. With certain tubes, such as the 117N7, the meter when this switch is set on NORMAL will deflect backwards (to the left) when push switch P3 is pressed for rectifier test. In such case turn the meter switch to REVERSE which will cause the pointer of the meter to move up the scale. After the test has been made return the switch to NORMAL.

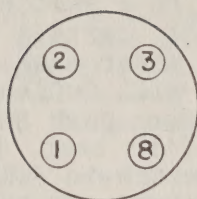
10. TOP CAPS. - There are two jacks in the upper center of the control panel marked GRID and PLATE. These are used when making connection to the top cap of the tube being tested. On the data chart in the NOTATIONS column opposite tube types having top caps is the notation CAP=G or CAP=P. G means that the top cap is connected to GRID jack and P that it is connected to the PLATE jack.

11. SOCKET NUMBERING. - In order to reduce selector set-up to a minimum, the socket contacts are numbered as shown on Plate 1 which shows the bottom views. The numerical values of the lettered dials as follows.

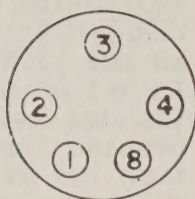
0	----	A	----	P
1	----	B	----	R
2	----	C	----	S
3	----	D	----	T
4	----	E	----	U
5	----	F	----	V
6	----	G	----	W
7	----	H	----	X
8	----	J	----	Y
9	----	K	----	Z

The letter I was omitted because of its resemblance to the figure 1. the letter Q was omitted because of its resemblance to the figure 0.

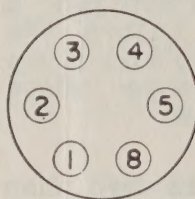
SOCKET NUMBERING BOTTOM VIEWS



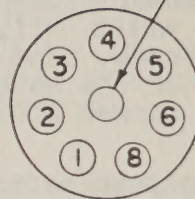
4 PIN



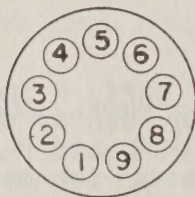
5 PIN



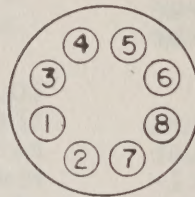
6 PIN



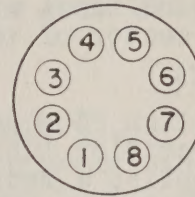
7 PIN
STANDARD



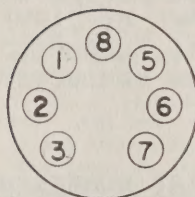
NOVAL



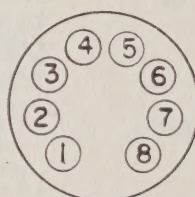
OCTAL



LOKTAL



7 PIN
MINIATURE



CIRCULAR
SUB MINIATURE



IN LINE
SUB MINIATURE

NOTE

The center of the large 7-pin socket is used to check pilot lamps. Set the filament selector switches on JR. Set the filament voltage switch to the proper voltage for the lamp being tested.

12. SPECIAL NOTES.— Power line voltage varies with different localities. It may also vary with different hours of the day.

While a national survey indicates that the average voltage for the USA is about 117 volts, it does not mean that every locality maintains a constant voltage at that level.

Occasionally we have had the complaint that a used tube will test GOOD, but will not work in the radio receiver; but when a NEW tube is substituted, the receiver will operate correctly. The answer is this: Tubes are built to specifications. Our tube testers are designed to test tubes in conformity with these specifications.

The used tube that would not per-

form in a certain receiver was not receiving its specified filament voltage. The new tube performed because of its initial reserve capacity. The used tube would have performed if it had received its specified filament voltage.

Tube failure frequently occurs in A.C.--D.C. sets where several tubes are connected with their heaters or filaments in series. Sometimes, even though the power line voltage is normal, a series tube with abnormally high filament resistance will rob its companion tube of its normal filament voltage. The robbed tube apparently fails; but when tested under specified conditions, the tube will test GOOD.

13. The versatility of the Hickok Dynamic Mutual Conductance Tube Tester makes possible a special test that will reveal a tube's ability to perform under adverse conditions as mentioned above. This is possible because the tester measures mutual conductance instead of emission.

THE TEST

a. Measure the mutual conductance in the ordinary way.

b. Press P4 and adjust the ENGLISH dial until the tube reads in the GREEN (GOOD) sector at 2000 on the 0-3000 scale.

c. While holding everything else constant, reduce the FILAMENT voltage and note new reading.

d. If the meter still reads in the GREEN (GOOD) sector, the tube has a large life reserve and will perform satisfactorily.

e. The filament voltage reductions to be made are shown in the following table:

NORMAL FIL. VOLTS	REDUCE TO
1.5	1.1
2.0	1.5
2.5	2.0
3.0	2.5
5.0	4.3
6.3	5.0
7.5	6.3
10.0	7.5
12.6	10.0
35.0	25.0
50.0	35.0

14. CONTINUITY TEST. - The Model 600A Tube Tester can be used to test for continuity through resistances up to 200,000 ohms.

a. Set SHORTS switch on position 4.

b. Connect two leads having prods

and pin tips to the jacks marked PLATE and GRID.

c. Touch the prods to the terminals through which continuity is to be determined.

d. The neon lamp will glow if circuit is continuous.

15. FILAMENT AND HEATER CONTINUITY.

1. Turn tester on.

2. Set selectors as per chart for tube to be tested.

3. Set FILAMENT switch on BLST instead of voltage indicated on chart.

4. Set SHORT TEST switch on position 5.

5. Place tube in proper socket.

If the neon lamp glows, the filament is good and a complete test should then be made on the tube, by setting FILAMENT switch on the proper tap, and while the tube heats, rotate the SHORT TEST switch several times thru all positions. If no shorts are indicated, set the switch in TUBE TEST position and proceed to test the tube as per chart.

If the neon lamp does not glow, filament is open and further test is unnecessary. Certain tubes such as the 35Z5-50Z7, etc. with tapped filaments have special continuity test settings, see roll chart:

TO TEST BALLAST TUBES

1. Turn Tester on.
2. Set filament switch to BLST.
3. Set SHORT TEST switch on 5.
4. Set first selector switch (lettered A to K) to letter shown in column marked (first selector) -- Set all numbered selectors on zero --
5. ROTATE second selector switch (lettered P to Z) from P to Z. NEON LAMP SHOULD LIGHT IN POSITIONS NOTED.

TUBE TYPE	First Selector	Neon lamp should light in these positions.						
1A1-1B1-1C1-1E1-1F1-1G1-1J1-1K1-1L1-1N1-1P1-1Q1-1R1G-1S1G-1T1G-1U1G-1V1-1Y1-1Z1-2	J	R						
2UR224	J			T				X
2LR212	H	R	S		U			

TUBE TYPE	First Selector	Neon lamp should light in these positions.						
3	J	R						
03G	J			T				
4-5	J	R						
6-133	J			T				
6-6AA	J	R						
7-8-9	J	R						
10A-10AG	J			T				
10AB	J			T				X
K17B-M17C-BM17C	J			T				X
M17HG-M17H	J		S					X
	D	R						
K23B-K23C-KX23B-KX30C	J			T				X
M30H	J		S					X
	D	R						
30A-K30A	J			T				
K30D	J	R		T				X
33A-33AG	J			T				
K34B	J			T				X
36A	J			T				
K36B-BK36B-L36B-BM-L36C-KX36C	J			T				X
KX36A	J	R						
36D-L36D	J	R		T				X
L36DJ	J	R	T	T	U			X
K36H-M36H-M36HG	J		S					X
	D	R						
L40S1-L40S2	J	R		T		V		
42A	J			T				
42A1	H				U			
42A2-42B2	H		S		U			
K42B-L42B-M42B-KX42B-LX42B-L42BX-K42C-L42C-M42C	J			T				X
KB42D-K42D-L42D	J	R		T				X
LX42D-L42DX	J	R	S	T				
K42E-L42E	J			T				X
L42F	J							X
	D	R						
42HA-K42HJ-M42H-M42HG	J		S					X
	E	R		T				
KX42C	J			T				X
L42S1	J	R		T		V		
49A-49AJ-K49AJ	J			T				
KX49A	J			T				X
49A1	H				U			

TUBE TYPE	First Selector	Neon lamp should light in these positions.						
49A2-49B2	H		S		U			
K49B-L49B-M49B-BM49B-K49C-M49C-BM49C-BK49C-K49E-L49E	J			T				X
K49D-BK49D-L49D	J			T				X
L49F	J							X
	D	R						
M49F-M49HG	J		S					X
	D	R						
KZ49B-KZ49C	J	R				V		
K49BJ-L49BJ	J			T	U			X
L49S2	J	R		T		V		
49AJ-K49AJ	J			T				
KX49B-LX49B-LX49C	J			T				X
L49DJ	J	R		T	U			X
L49S3	J	R		T		V		
50A2	J	R		T				
50A2MG-50B2	J	R				V		
50X3	J	R						
K52H-M52H	J		S					X
	D	R						
K54B	J			T				X
55A-K55A	J			T				
55A1	H				U			
KX55A	J	R						
55B-K55B-M55B-BM55B-L55BG-LX55B	J			T				X
55A2-55B2	H		S		U			
K55C-L55C-KX55C	J			T				X
K55CP	J			T		V		X
K55D-L55D	J	R		T				X
L55E-M55E	J			T				X
L55F-M55F-BL55F	J							X
	D	R						
K55H-M55H-M55HG	J		S					X
	D	R						
L55S1-L55S2	J	R		T		V		X
60R30G	J	R		T				
64.23	J			T				
67A	J			T				
K67B-L67B	J			T				X
L73B-K74B-L74B-CX74C	J			T				X
80A	J			T				
K79B-K80B-M80B-K80C-KX80B-L80B	J			T				X

TUBE TYPE	First Selector	Neon lamp should light in these positions.						
K80F	J							X
	D	R						
KX87B-LX87B-L90B	J			T				X
K90F-M90F-K92F-M92F	J							X
	D	R						
92A	J			T				
L92B-95K2	J			T				X
L99D	J	R		T				X
100R8	J			T				X
120R	J	R						
120RS-135K1	J			T				X
135K1A	J			T	U			X
140L4-140L8-140R4-140R8	J	R		T				
140R	J	R						
140L44-140R44	J	R	S	T				
165L4-165R4-165R8	J	R		T				
165R	J	R						
165L44-165R44	J	R	S	T				
185L4-185L8-185R4-185R8	J	R		T				
185R	J	R						
185L44-185R44	J	R	S	T				
200R-250R	J	R						
250R8-290L4	J			T				X
300R4-320R4	J			T				X
340	J	R						
808-1	J			T	U			X
E14980-W43357-W4588-3613	J			T				X
3334-3334A	J	R		T				X
8593-8598-8601-8664	J			T				X
3ER248	J	R		T	U			X
3CR241	J	R		T				X

PARTS LIST FOR MODEL 600A TUBE TESTER

NOTE: There is a minimum charge of \$1.50 for any parts order

HICKOK CODE NO.	NAME AND DESCRIPTION	REF. SYMBOL OR FUNCTION
2490-261	BOOKLET, Instruction	
2920-7	BUTTON, Push: black	
2920-8	BUTTON, Push: red	
3095-41	CAPACITOR: 2700 mmf, 500 V, 10%, mica	C2, C4
3105-175	CAPACITOR: .05 mfd, 400 V, paper	C1
3085-45	CAPACITOR: 50 mfd, 6 V, DC, electrolytic	C3
3200-47	CHART, Roll: tube data	
4160-67	DIAL Ass'y: Bias	
4160-73	DIAL Ass'y: English	
10300-1	JACK, Pin: red, Eby #52	
10300-2	JACK, Pin: black, Eby #52	
11505-3	KNOB	
12270-14	LAMP: neon glow, 1/25 watt N.E. 51, Bayonet Base	
12270-2	LAMP: auto, Tung-Sol #81, bayonet type	
12270-17	LAMP: #49 pilot, .06 amp., 2V, bayonet	
12450-145	LEAD; Ass'y:	
12450-180	LEAD, Ass'y: Grid cap, Amphenol #63-1W	
660-005	METER: DC, 66G, flush square, 233 ohms, 500 microamps	
16926-4	POTENTIOMETER: dual, 150-150 ohms, linear, wire wound, Mallory #MM150P	R4, R5
16926-5	POTENTIOMETER; Ass'y: 3000 ohms	BIAS, R7
18410-472	RESISTOR: 47 ohms, 1/2 W, 10%, fixed, comp.	R20, R21, R22
18414-181	RESISTOR: 180,000 ohms, 1/2 W, 5%, fixed, comp.	R23, R29
18414-152	RESISTOR: 150,000 ohms, 1/2 W, 10%, fixed, comp.	R28
18414-182	RESISTOR: 180,000 ohms, 1/2 W, 10%, fixed, comp.	R8
18414-121	RESISTOR: 120,000 ohms, 1/2 W, 5%, fixed, comp.	R10, R15
18415-272	RESISTOR: 2.7 meg, 1/2 W, 10%, fixed, comp.	R17
18422-122	RESISTOR: 1200 ohms, 1 W, 10%, fixed, composition	R2
18423-151	RESISTOR: 15,000 ohms, 1 W, 5%, fixed, comp.	R3
18525-427	RESISTOR: 500 ohms, 1/2 W, 1%	R26, R27
18525-544	RESISTOR: 12 ohms, 1/2 W, 1%, fixed, deposited film	R9
18525-545	RESISTOR: 135 ohms, 1/2 W, 1%, deposited film	R25
18550-89	RESISTOR: 215,000 ohms, 1 W, 1%	R24
18575-12	RESISTOR: 1800 ohms, 10 W, 10%, fixed, vitreous enamel	R1
18575-19	RESISTOR: 100 ohms, 10%, vitreous enamel, center-tapped	R12, R13
18575-89	RESISTOR: 8500 ohms, 10 W, 10%, wire wound	R6
18575-126	RESISTOR: 150 ohms, 2 W, 1%, deposited film	R14
18750-2	RHEOSTAT: 200 ohms, 25 W, Mod. D, Ohmite #2878-3SC	R16
19350-1	SOCKET: small bayonet, Drake #614L-CH-LT	
19350-62	SOCKET: 9-pin, black, Cinch Mfg.	
19350-76	SOCKET: 7-pin miniature, Amphenol #147-170-24	
19350-93	SOCKET: 4-pin, black, Amphenol #78S-4	
19350-94	SOCKET: 5-pin, Amphenol #78S-5	
19350-95	SOCKET: 6-pin, Amphenol #78S-6	

Prices will be furnished upon request.

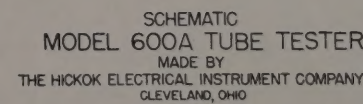
PARTS LIST FOR MODEL 600A TUBE TESTER

NOTE: There is a minimum charge of \$1.50 for any parts order.

HICKOK CODE NO.	NAME AND DESCRIPTION	REF. SYMBOL OR FUNCTION
19350-96	SOCKET: 7-pin, Amphenol #78-7CD	
19350-97	SOCKET: 8-pin octal, Amphenol #78-8I	
19350-99	SOCKET: 8-pin octal, Amphenol #78S-8	
19350-101	SOCKET: sub-miniature, Cinch #EXP-8694	
19350-119	SOCKET: sub-miniature, 7-contact, Cinch #EXP-8736-B1	IN-LINE
19910-95	SWITCH: Push button, 7-gang, Oak	P1-P7
19911-7	SWITCH: Snap DPDT, Oak #16743-78	METER REVERSING
19911-9	SWITCH: Toggle, SPST, A.H. & H. #20994-DA, with bat handle	OFF-ON
19911-16	SWITCH: Toggle, DPDT,	SHORT TEST
19912-202	SWITCH: Rotary, 1 section, 2 pole, 20 position	FILAMENT
19912-203	SWITCH: Rotary, 5 section, 6 position, Oak Type G	SHORT TEST
19912-276	SWITCH: Rotary, 5 section, 10 position, Oak Type G	SELECTORS
19912-277	SWITCH: Rotary, 1 section, 10 position, Oak Type G	CATHODE-SUPPRESSOR
20800-144	TRANSFORMER: Power	
20875-6	TUBE: 5Y3GT/G	RECTIFIER
20875-28	TUBE: 83	RECTIFIER
19350-156	SOCKET: Octal, wafer, Cinch #11961	
19350-157	SOCKET: 4-pin, wafer, Cinch #X154	

In ordering parts or materials for this instrument, the serial number must be given in order to identify properly the material required.

Prices will be furnished upon request



Hickok



**ELECTRICAL
INSTRUMENT
COMPANY**

10514 DUPONT AVE., CLEVELAND 8, OHIO